



Summary of MIDDLE MILE Partner Applications

BOYCOM CABLEVISION INC.



Problem

- The rural southeastern region is the most economically distressed region of the State. According to the USDA, 11 of the state's 15 persistent poverty-designated counties are in the Proposed Funded Service Areas (PFSAs) of the project
- The population density of the area's southern corridor is 34.2 persons per sq. mi. compared with 95.4 for the rest of Missouri
- According to US Census statistics, compared to state and national averages, the region's population is older, less educated, and has a higher poverty rate
- No continuous middle-mile full fiber infrastructure exists today within the 17 PFSAs, meaning that the area's residents and businesses have little hope of realizing the benefits of competitive last mile high-speed broadband

Solution - Easygrants #5662*

- The Southeast Missouri Comprehensive Communities Project (the Project) will construct a 719 mile, 144-count fiber, carrier-grade Ethernet backbone, able to supply 100 Mbps Internet connections to households and 1 GigE connections to businesses and anchor institutions
- The Project will also include a 315 Last Mile FTTH component
- The Project will bring secure, redundant and affordably priced Internet access, data transport and point-to-point network service to 21 counties with a combined area of almost 14,000 square miles
- The 17 proposed funded service areas (PFSAs) include 75 communities, comprised of 261,495 households and 23,282 businesses, and will pass or connect 1,683 community anchor institutions
- Additionally, Boycom has arranged to provide fiber connectivity for the Roberts Companies Tower Division for wireless opportunities
- For anchor institutions and businesses, the plan is to offer a 20 Mbps, 50 Mbps or 100 Mbps standard package, scaling up to 1GigE, as well as a point-to-point solution. Last mile service providers will be offered a 50 Mbps, 100 Mbps, 500 Mbps or 1 GigE standard package scaling up to 10 GigE, and two standard point-to-point solutions: 100 Mbps and 1 GigE
- The Project will direct 5% of free-cashflow for its first ten years into a fund encouraging business development and entrepreneurship. The fund will be directed and administered by the Ozark Foothills Regional Planning Commission (OFRPC), which will select participants placing particular emphasis on Small Disadvantaged Businesses
- The total eligible cost of the project will be \$58.5 million, which includes a last mile cost of \$8.87 million (15.6% of the total)

Amount grant:	\$46,800,000
Amount cash match from company:	\$9,700,000
Amount cash match from state:	\$2,000,000
Total project cost:	\$58,500,000
Project match \$	\$11,700,000
Project match %	20.0%



- The project will create approximately 181 jobs: 147 construction jobs during the 2.5 year build, and 34 new ongoing jobs for line techs, NOC engineers, sales and G&A positions. It is estimated that the project will generate 930 direct jobs and 835 indirect

Qualifications, Readiness and Other partners

- The project is a private/public partnership led by Boycom Cablevision, one of the region's primary rural telecommunication service providers. Boycom Cablevision owns cable television systems, successfully providing video and high-speed data in 32 communities, covering 13 counties throughout the southern part of Missouri and in Arkansas since 1992, and has deep experience in both cable operations and telecommunications construction
- The firm has partnered with Pulse Technology, which was successful with the Ralls County application in Round 1, to design, engineer and oversee network construction. Pulse Broadband has managed the design and engineering for the construction of over 50,000 miles of plant and managed the engineering for networks serving 12 million customers. Pulse Broadband's senior engineering team created the first deployment of fiber optic technology in the cable TV industry at Time Warner Cable
- Finally, all key construction, OSP, electronic equipment and NOC contractors are lined up to start the project. All have direct experience with government contracts, government compliance and Davis Bacon reporting
- The Ozark Foothills Regional Planning Commission (OFRPC) will provide grant administration, reporting and compliance oversight and will interface with state agencies, including environmental, during the construction phase
- Other project partners include MOREnet, the Missouri Research and Education Network, which will offer service to community colleges and universities, K-12 schools, libraries, government agencies and Tele-Health clinics through a dedicated fiber network embedded in the backbone. In return, MOREnet will provide the anchor connection equipment at no cost to the project, and will pay a share to maintain the network
- MoDOT, the Missouri Department of Transportation will serve state transportation and other public safety agencies through a separate dedicated fiber network embedded in the backbone. In return, MoDOT will provide right-of-way access along state highway routes and hut location property at key regeneration and points of presence sites along the route. MoDOT will also pay for installation and power for their connection equipment and provide permitting assistance
- Other partners include a consortium of the area's community colleges, Three Rivers Community College, Mineral Area College and Jefferson College, and Missouri State University-West Plains whose districts span the project area



Problem

- Sho-Me's middle-mile project will dramatically increase the prospects for competitive last-mile broadband services throughout rural, underserved and unserved areas of the State where 93% of the proposed service territory is economically distressed
- The vast majority of Missouri is rural, with numerous small, isolated, rural communities whose very existence is threatened by the lack of affordable broadband services. Many of these areas are in economic decline

Solution - Easygrants #4521*

- Using detailed demographic and other data, Sho-Me Technologies has identified a network footprint that promises to reach areas of Missouri most in need of connectivity and reliability
- The initiative will expand broadband availability geographically to an additional 26% to 29% percent of the State of Missouri
- The network encompasses the southern central part of the state covering 30 counties by way of 1,380 miles of fiber optic cable
- The network, operated by Applicant will provide state-of-the-art data transmission services on an aggressively open-access basis, for all last-mile broadband providers
- Of the 229 communities represented in the 30 counties, 136 communities fall within a half mile of the proposed network
- There are over 6,000 health care and social assistance businesses in the service area, as well as, 140 school districts and 69 libraries
- The network will conservatively connect 100 community facilities, public safety, and anchor institutions and many more via other last mile providers
- The population of the proposed funded service area is over 1,000,000 people
- It is estimated that approximately 288 job-years will be impacted by the project in the near term (e.g., fiber installation technicians, construction workers, etc.) and this project is expected to be complete in one year (12) calendar months

Amount grant:	\$26,600,000
Amount loan:	\$0
Amount cash match from company:	\$2,600,000
Amount in kind match from company:	\$8,800,000
Amount cash match from state:	\$0
Amount in kind match from state:	\$0
Total project cost:	\$38,000,000
Project match \$	\$11,400,000
Project match %	30.0%

- With the cooperation of a variety of public and private sector supporters, Sho-Me intends to create a broadband ecosystem in which broadband competition can flourish, giving previously underserved communities, businesses, and residents the opportunity to acquire fiber-based service at affordable prices
- The fiber will be lit with Dense Wave-Division Multiplexing (DWDM) and Ethernet technologies
- The technical design of the network and the underlying business plan reflect the intended purpose of the network, which is not to limit its use to certain favored entities or applications, but instead to be a pure 'open access' network, with the facilities potentially shared among over 66,000 unrestricted business users and 260,000 households
- The network will not favor any applications and/or content over others, nor will it define the kind of services that can be offered by other providers
- The choices of services are determined between the end user and their service provider
- The overall infrastructure cost of the planned system is \$29,200,000
- With contributed funds from Sho-Me Technologies, the total grant amount requested is \$26,600,000
- The value of the total project is \$38,000,000 which includes an in-kind contribution of 880 miles of existing route miles of fiber

Qualifications, Readiness and Other Partners

- Sho-Me Technologies is a subsidiary of Sho-Me Power Electric Cooperative, an electric power generation and transmission cooperative that has served rural Missouri electric service cooperatives for 62 years
- Sho-Me Technologies is an interexchange carrier certified by the Missouri Public Service Commission and adheres to the principles contained in the FCC's Internet Policy Statement
- For years, the network owned by Sho-Me Technologies has serviced the Education Network providing circuits to Missouri's K-12 schools, colleges, public libraries, health care, and affiliated organizations
- Sho-Me Technologies has provided middle-mile communications services in Missouri since 1997, and has a proven track record of success
- The project will support and complement several other Recovery Act projects, including the DoE Smart Grid initiatives, the Title XIII health information technology initiatives, and the Title VIII education programs, among others



Problem

- BlueBird Media will develop a middle-mile broadband network to service underserved areas of Northern Missouri
- Northern Missouri is mostly rural and agricultural. Population density is low in the area

Solution - Easygrants #6519*

- BlueBird Media is applying for federal funding, with collaborative input and support from the State and *MoBroadbandNow*, to construct an ultra-high capacity middle-mile network throughout underserved and disadvantaged areas in the State of Missouri
- BlueBird will provide next generation bandwidth at economically competitive prices, and offer service to community anchor institutions, promoting public/private partnerships
- BlueBird will use a reliable and cost effective hybrid IT Ethernet broadband solution together with a proven fiber/microwave network
- The network will have a minimum of 1GigE access expandable to 1 Terabit level which will help develop all last mile networks to support data, voice, and video communication, enabling a broad range of fixed and mobile application for public and private systems
- The Missouri Statewide area network (*MoBroadbandNow*) has multiple advantages in cost, access, expandability, stability, uniformity, and sustainability to serve the citizens of rural Missouri for the 21st century
- Coverage:
 - The geographical area that will be affected is Northern Missouri with more than 46 counties, covering more than 6,250 total square miles
 - Total population for the proposed areas is 2.3 million residents equating to approximately 840,000 households with additional 57,000 businesses
 - The collective geographical area represented in this proposal has well over 576 critical community institutions ranging from fire, police, libraries, schools, courthouses, water utilities and waste water treatment facilities
- Proposed Services:
 - BlueBird Media plans to offer at least 25% lower than advertised rate packages to all critical community facilities within the proposed funded service area
 - BlueBird plans on developing a compressive network that is comprised mainly of Ethernet Broadband Technology
 - At first, the service will provide bandwidth at a low cost to last mile providers and institutions
 - Later, after the network build-out, additional services including video and Voice Over IP will be added to the network
 - Typical key institutions will have a minimum service of at least 30 Meg, 100 Meg, 500 Meg and 1 Gig E access within the coverage area. Interconnect Obligations: BlueBird will be building a robust infrastructure network that will be able to service multiple providers. This additional capacity will allow easy expansion for any new entrant in the service area
- Also, BlueBird Media will proudly display the network's nondiscrimination and interconnection policies in a prominent location. Broadband System:
- BlueBird's innovative hybrid broadband access network solutions are the ideal technology for delivering high-demand technologies such as broadband Internet access, video services, security surveillance, VOIP and GPON
- BlueBird's broadband technology combines field proven toughness with exceptional performance, security, ease-of-use and cost effectiveness. It significantly reduces the time to design and deploy new commercial and enterprise broadband networks
- It also seamlessly integrates with existing network systems and management tools extending and augmenting existing service simpler and less cost-intensive

- BlueBird's broadband access networks offer one of the lowest total costs of ownership in the industry and can deliver a proven business case
- Cost: Overall infrastructure cost for this project will be approximately \$65,527,000
- Number of Expected Subscribers:
 - Within the first 12 months of installation BlueBird Media plans to obtain at least 40% of the network operational. During this time period, 5% of market penetration which is equivalent to about 500 to 800 subscribers, is expected
 - After the promotion of BlueBird Media, LLC, an extensive marketing campaign will promote middle-mile access in order to substantially increase subscribers within the market at very affordable prices. Jobs:
- BlueBird Media looks to construct over 56 POPs in this area which will effectively create at least 24 months of work for over 746 jobs created from construction, manufacturing, and service job
- After implementation of this network, there will be approximately 40 sustainable jobs for the lifetime of this network

Qualifications, Readiness and Other Partners

- Qualification Experience: BlueBird has a collection of highly experienced personnel in networks infrastructure
- Some of its core individuals have specialized in network development, both nationally and internationally, for such prestigious companies as Verizon, T-Mobile, Digicel, Claro, US Cellular, ClearWire, MediaFlo and thousands of governmental installations
- Also, it has picked an integrator, GlenMartin, which incorporates everything under one roof, including project management, manufacturing, construction, and IT network administration
- GlenMartin has also partnered with Motorola, ALU which has over 80 years of radio and fiber knowledge, experience and leadership and dedication to creating and maintaining robust networks
- Presently, BlueBird has interconnect agreements with Sho-Me, BoyCom, UECI, Co-MO, Socket Telecom, and Ralls County Cooperative



Problem

- Kansas City and the surrounding communities have been hit hard by the deep recession
- The five counties comprising the proposed service area have lost over 15,000 net jobs from December 2008 to January 2010
- In fact, Jackson County, MO and Wyandotte County, KS were designated economically distressed areas based on high unemployment and low median income
- While other larger metropolitan areas throughout the US have extensive fiber networks forming the basis of a digital economy, Kansas City has fallen behind
- The Kansas City MSA ranks 68th among U.S. MSAs in terms of total middle-mile fiber mileage
- The Kansas City metropolitan region is in dire need of a major upgrade to the ramps to the information superhighway to foster rapid economic development
- The Kansas City metropolitan region needs to replace these lost jobs with higher paying jobs predicated on the information-based economy, which has gone underdeveloped relative to other areas
- Additionally, Missouri and Kansas' government facilities and public safety entities are exposed to potential connectivity failures given current limited points of access as well as bandwidth constraints on the existing network
- These critical facilities need a high-speed communications network with route diversity available at a reasonable cost to communicate, coordinate, and respond more effectively
- In fact, Missouri and Kansas' public safety agencies are facing the daunting challenge of adhering to regional interoperability mandates from the Federal government by 2012, while saddled with the handicap of having far less core fiber network than other parts of the USA

Solution - Easygrants #7425*

- American Fiber Systems, Inc. ('AFS') in partnership with the Missouri Research and Educational Network (MOREnet), Leavenworth County, Clay County, Platte County, and the Mid-America Regional Council seeks \$10,573,085 in BTOP Middle Mile Infrastructure funding from the ARRA to complete a fiber-based network in the states of Kansas and Missouri
- The 'shovel ready' build out of the Missouri and Kansas Community Broadband Network ('MO/KS-Net') will connect 44 community anchor institutions ('CAIs') in MO and KS
- In addition, MO/KS-Net will provide advanced fiber-based broadband services to the communities, CAIs, and businesses along and near the project route
- The project is a collaborative public-private effort establishing partnerships between multiple municipal, community organizations, and AFS, an industry leading fiber service carrier, to provide reliable, scalable, and cost-effective high-speed middle mile broadband connectivity
- MO/KS-Net will provide a fiber-optic platform that provides the proposed funded service area with a future-proofed, technology-agnostic platform with a lifespan of well over 40 years
- It will build 105 miles of new fiber utilizing the local labor force connecting 44 CAIs. In addition, MO/KS-Net will connect with 5 interconnection points along the fiber route ensuring middle-mile fiber is available to other communities, CAIs, and businesses
- The CAIs connected initially are the highest bandwidth and greatest need facilities defined by project partners
- More CAIs will be connected after the funding period as the needs arise. It is expected that that the project will be complete within 30 months and create 144 jobs
- The project will connect 29 government facilities and public safety sites in the proposed service area, providing these institutions reliable and route diversified access to the critical data that they require
- The fiber connectivity will enhance planning, coordination, and responsiveness of first responders across all communities and enable more coordinated and efficient law enforcement and emergency response
- It will also connect 5 MOREnet community colleges providing these institutions access to broadband capacity needed to drive innovation

- The project will create immediate jobs and the bandwidth capacity will enable the creation high-paying 'knowledge jobs' in years to come
- MO/KS-Net will dramatically improve last mile broadband access particularly for underserved communities along the fiber route (8 communities within the service area are underserved)
- To accomplish this, MO/KS-Net will enable further competition and investment for Fiber-To-The-Home (FTTH) companies
- It will make available 24 strands of dark fiber from its existing backbone along with 24 strands from this proposal to FTTH providers at a lease cost of \$1 for 40 years of use
- This will make available, at virtually no cost, more than 125 route miles of backbone fiber to FTTH providers, thus eliminating millions of dollars of costs typically incurred in a network build
- This proposal will enable and encourage competition to enter the market, resulting in lower prices, better choices, and increased service reliability
- The project application contains one proposed funded service area consisting of 105 miles of new fiber build in Kansas City, Liberty, Excelsior Springs, Platte City, Leavenworth, and Lansing
- The new fiber build passes communities that include 316,439 households, 26,804 businesses, and 2,168 CAIs
- The project includes existing AFS fiber miles and equipment as in-kind contributions, but these figures are associated only with the new fiber build. AFS will be providing a cash match equal to 14% of the Total Project Cost build cost plus an in-kind contribution of existing fiber facilities and equipment equal to 30%; therefore, the total AFS match is 44%
- The Federal BTOP grant request is for \$10,575,085, 56% of the total project cost
- The project will use fiber-optic network cables and equipment from manufactures including Nokia-Siemens and Ciena, which were selected based on quality and reliability
- For CAIs and businesses along the fiber, AFS will make the following transport services available: Ethernet private line, virtual private line, virtual LAN, internet access; managed wavelength service; TDM / SONET transport; dark fiber
- Bandwidth available ranges from 10Mb to 10Gb and soon 100Gb
- AFS is a non-discriminatory open access provider of wholesale transport services to any party interested in purchasing capacity, including carriers, last mile providers, businesses, and institutions
- AFS does not discriminate against potential customers and makes available dark fiber strand leases on a non-discriminatory basis to any party
- AFS' approach to selling bandwidth adheres to the non-discrimination and interconnection requirements of the BTOP NOFA

Qualifications, Readiness and Other Partners

- Proof of Readiness Since 2000 AFS has successfully designed and deployed middle-mile fiber-based networks in 9 metro markets across the USA, including over 1,110 route miles and 1,764 on-net locations including customer facilities, carrier hotels, central offices, data centers and cell towers
- Over the last 5 years AFS has significantly and successfully expanded the networks in all of its markets and completed over 100 fiber projects of varying scale and complexity
- For example, AFS and its partners successfully implemented a project for the State of Nevada to connect all of its critical facilities with intercity connectivity between Reno and Carson City
- The company's core competency is the successful design, implementation, and operation of fiber networks, which it has demonstrated continuously since its inception
- The project is a public-private partnership with MOREnet, Leavenworth County, Clay County, Platte County, the Mid-America Regional Council, and AFS. The project has received overwhelming support from state, county, and city agencies and community anchor institutions



Problem

- City Utilities' experiences involving fiber developed in the late 1980s and broadband services in the mid-2000s. However, the fiber-to-the-customer active Ethernet transport to the community began in 2000 under SpringNet business operations
- By any measurement this was a very early deployment of metro Ethernet services
- Once the community and businesses began to fully adopt and implement these 'LAN extension cord' services, the demand has consistently challenged the business unit's capital budget authority
- However, the economic condition of our nation has challenged the Utilities' financial picture over the last two years regarding the availability of capital funds
- Outstanding requests for service and network upgrade requirements are necessary to address a growing bandwidth appetite and evolutionary feature capabilities needed by existing and new users of the broadband network
- As reference, the Internet backhaul requirements to support this local broadband network have grown significantly since its inception
- Initially, 45 Mbps of backhaul was necessary however, today that backhaul requirement is 2.6 Gbps

Solution - Easygrants #4774*

- This project seeks to secure approximately 68% of the capital funding necessary to continue expanding this network
- The SpringNet service territory is reflective of the municipal corporate limits of Springfield, Missouri
- There are 186 community anchor institution sites that are currently participating in this network
- The project represents several significant upgrades, including:
 - increasing the operating backbone to 10 Gbps,
 - adding over 100 miles of additional fiber,
 - connecting 34 additional community anchor institution sites,
 - upgrading the network hardware to support IPv6 address and class of service requirements for voice and video packets,
 - making reliability improvements,
 - increasing the customer interface to 1 Gbps for symmetrical burstable Internet access and private networking needs.
- In addition to these benefits being realized by the community anchor institutions, existing and new third party service providers, last mile service providers, and local businesses will leverage these advancements within their business
- SpringNet's broadband system is best described as an active Ethernet, partially meshed, local fiber network. It is a standard's based solution which is easily duplicated
- The architectural design of the network and its daily operations adhere to the interconnection and non-discrimination requirements of the NOFA. This openness allows customers to attach any industry standard Ethernet network equipment to the network and operate with no intermediary equipment
- This philosophy is continued through to its interconnection with upstream Internet providers. SpringNet services have achieved a value added position with the customer by openly adopting interconnection and non-discrimination philosophies
- The overall cost of the project is \$19,230,788
- City Utilities has previously invested \$40+ million and is committing another \$6.1 million of matching funds to meet the 30% target
- The forecasted subscriber growth begins with an established base of community anchor institutions and businesses and grows between 2% and 5% annually after construction
- The calculated estimated jobs are based on the methodology provided and indicated a total of 143 job years as a result of this project

Qualifications, Readiness and Other Partners

- An NTIA grant award to City Utilities is not just an investment; it's an investment in an established organization with broadband experience and a well documented history of operating knowledge and innovation
- City Utilities' history should bring confidence to the evaluation of its project:
 - 60+ years of experience being a provider of electric, natural gas and water services with a customer expectation of 'always on,'
 - 23 years of fiber optic design, installation and plant operational experience,
 - 13 years of successful business development and business operations experience,
 - an existing customer base which is comprised of 29.5% community anchor institutions ' the highest evaluation priority for BTOP CCI applications
- Municipal utility ownership brings additional value to its project:
 - cost based rate philosophies,
 - a commitment to operational support,
 - opportunity to incorporate the future needs of electric, natural gas and water service deliveries such as smart grid and automated metering infrastructure,
 - existing relationships with the local Chamber of Commerce for economic development purposes,
 - existing relationships with all the community anchor institutions as their traditional utility service provider,
 - an ownership structure which promotes community focus, and brings to the project an existing service organization with unmatched readiness
- City Utilities' accomplishments as detailed in the project are intended to demonstrate its comprehensive vantage point, as a multi-disciplined utility, for all of anchor institutions within the community it serves
- The continued interest shown for SpringNet services; NetLink, LANLink, and collocation, during a protracted recessionary period supports the belief that advanced broadband capabilities assist in supporting economic growth and job creation

***denotes Federal ID Number**

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